

Claims

1. A hollow elongated structural design component (1) for a vehicle body having a portion bendable when a collision load is applied in a longitudinal direction of the component (1), said portion having an initial closed cross-section essentially orthogonal to said longitudinal direction, said component (1) comprising means (2a) arranged to, during the initial stages of bending, essentially maintain the initial cross-section of said portion, characterized in, that said component (1) further comprise means (3) arranged to, during the initial stages of bending, induce local buckling at multiple distributed locations along a delimiting wall (1a) of said structural design component (1) arranged to, upon bending, being subject to negative pushing stresses.
2. A structural design component (1) according to claim 1, characterized in that said means (2a) for maintaining the initial cross-section and said means (3) for inducing local buckling are part of a longitudinally extending deformation control element (2) arranged within said component, which deformation control element (2) is continuous throughout said portion.
3. A structural design component (1) according to claim 1 or claim 2, characterized in that said means for maintaining the initial cross-section comprise at least two longitudinally spaced apart sheet members (2a) arranged within said structural design component (1) essentially orthogonal to said longitudinal direction and essentially filling out the initial closed cross-section.
4. A structural design component (1) according to claim 3, characterized in that said sheet members (2a) are spaced apart by essentially longitudinally extending spacing sections (2b) of low bending stiffness.
5. A structural design component (1) according claim 4, characterized in that each of said spacing sections (2b) are arranged along an inner delimiting wall of said structural design component (1) and interconnect two of said sheet members (2a).
6. A structural design component (1) according to claim 5, characterized in that said spacing sections (2b) alternately are arranged along opposing inner delimiting walls of said structural design component (1).
7. A structural design component (1) according to claim 2, characterized in that said means for inducing local buckling comprise longitudinally spaced apart interconnections (3) between said deformation control element (2) and said delimiting wall (1a) of said structural design component (1) arranged to ,upon bending, being subject to negative pushing stresses.

8. A structural design component (1) according to any of claims 3 to 6,
characterized in that said means for inducing local buckling comprise longitudinally
spaced apart interconnections (3) between at least two of said sheet members (2a) and
said delimiting wall (1a) of said structural design component (1) arranged to ,upon
5 bending, being subject to negative pushing stresses.
9. A structural design component (1) according to any of claims 4 to 6,
characterized in that said means for inducing local buckling comprise longitudinally
spaced apart interconnections (3) between at least two of said spacing sections (2b) and
10 said delimiting wall (1a) of said structural design component (1) arranged to ,upon
bending, being subject to negative pushing stresses.
10. A structural design component (1) according to any one of the preceding claims,
characterized in that said structural design component (1) is a sheet metal component
15 and said means (2a) for maintaining the initial cross-section and said means (3) for
inducing local buckling comprise sheet metal members.
11. A structural frame of a vehicle body,
characterized in that it comprises a structural design component (1) according to any one
20 of the preceding claims.
12. A vehicle,
characterized in that it comprises a structural design component (1) according to any one
of claims 1 to 10.
25

US Type claims

1. A hollow elongated structural design component for a vehicle body having a portion bendable when a collision load is applied in a longitudinal direction of the component, said portion having an initial closed cross-section essentially orthogonal to said longitudinal direction, said component comprising means arranged to, during the initial stages of bending, essentially maintain the initial cross-section of said portion, wherein said component further comprise means arranged to, during the initial stages of bending, induce local buckling at multiple distributed locations along a delimiting wall of said structural design component arranged to ,upon bending, being subject to negative pushing stresses.
2. A structural design component according to claim 1, wherein said means for maintaining the initial cross-section and said means for inducing local buckling are part of a longitudinally extending deformation control element arranged within said component, which deformation control element is continuous throughout said portion..
3. A structural design component according to claims 1 or 2, wherein said means for maintaining the initial cross-section comprise at least two longitudinally spaced apart sheet members arranged within said structural design component essentially orthogonal to said longitudinal direction and essentially filling out the initial closed cross-section.
4. A structural design component according to claim 3, wherein said sheet members are spaced apart by essentially longitudinally extending spacing sections of low bending stiffness.
5. A structural design component according to claim 4, wherein each of said spacing sections are arranged along an inner delimiting wall of said structural design component and interconnect two of said sheet members.
6. A structural design component according to claim 5, wherein said spacing sections alternately are arranged along opposing inner delimiting walls of said structural design component.
7. A structural design component according to claim 2, wherein said means for inducing local buckling comprise longitudinally spaced apart interconnections between said deformation control element and said delimiting wall of said structural design component arranged to ,upon bending, being subject to negative pushing stresses.
8. A structural design component according to claim 3, wherein

said means for inducing local buckling comprise longitudinally spaced apart interconnections between at least two of said sheet members and said delimiting wall of said structural design component arranged to ,upon bending, being subject to negative pushing stresses.

5

9. A structural design component according to claims 4, 5 or 6, wherein said means for inducing local buckling comprise longitudinally spaced apart interconnections between at least two of said sheet members and said delimiting wall of said structural design component arranged to ,upon bending, being subject to negative pushing stresses.

10

10. A structural design component according to claims 4, 5 or 6, wherein said means for inducing local buckling comprise longitudinally spaced apart interconnections between at least two of said spacing sections and said delimiting wall of said structural design component arranged to ,upon bending, being subject to negative pushing stresses.

15

11. A structural design component according to any one of the preceding claims, wherein said structural design component is a sheet metal component and said means for maintaining the initial cross-section and said means for inducing local buckling comprise sheet metal members.

20

12. A structural design component according to any one of the preceding claims, wherein said structural design component is arranged in a structural frame of a vehicle body.

25

13. A structural design component according to any one of claims 1-11, wherein said structural design component is arranged in a vehicle.

30